



SPECIAL AIRWORTHINESS INFORMATION BULLETIN

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**Federal Aviation
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<http://www.faa.gov/aircraft/safety/alerts/SAIB>

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin alerts you, owners and operators, of certain **The New Piper Aircraft, Inc. (Piper) PA-31 series airplanes** that are modified by Colemill Enterprises, Inc. Supplemental Type Certificate (STC) SA1151SO (Propellers, Cowling, and Wing Tip Modification). These airplanes could lack adequately maintained bladder type fuel cells. Our concern involves wire arcing caused by improperly installed wiring and fuel vapor accumulation that occurred as a result of fuel cell vent nipple deterioration. This condition can lead to fuel vapor ignition in the wing.

Background

A Piper PA 31-350 aircraft with STC SA1151SO installed was substantially damaged after experiencing an explosion in the right wing during take-off roll. No injuries or deaths occurred due to the explosion.

Assessment of repairs to the airplane discovered that the right main bladder type fuel tank vent nipple was broken off and the nipple material was brittle and deteriorated. This condition led to fuel vapor accumulation and migration into the outbound wing fuel cell cavity. Further inspection found unsecured electric wiring, associated with STC SA1151SO's wing tip modification, chafing on structure near wing station 148 of the right wing. There was evidence of the wire arcing to structure and the connected circuit breaker was tripped open. We suspect electrical arcing

from the wing tip wiring to be the ignition source of the accumulated fuel vapor.

Recommendation

We recommend that you do the following:

- Inspect (one-time) any Piper PA-31 series airplane modified by STC SA1151SO for proper routing and security of all wiring in accordance with Colemill Enterprises, Inc. Service Bulletin #1.
- Inspect all wiring located next to wing fuel cell bladders for security and condition.
- Repair or replace damaged or unsecured wiring per Piper PA-31 service manual.
- Perform the 100-hour inspection requirements for fuel tanks and lines as defined in the Piper PA-31 maintenance manual's Wing Group portion of the inspection interval section. You should include these inspection requirements in either the annual inspection or 100-hours inspection program for PA-31 aircraft.

Additional continued airworthiness test and inspection information is found in both Piper Service Bulletin number 591 and Goodyear Aerospace Service Bulletin FT-77-1.

For Further Information Contact

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